

DRAFT
AOC 1 REMOVAL ACTIONS
SUMMARY REPORT

FOR THE
US OIL RECOVERY SUPERFUND SITE
200 N. AND 400 N. RICHEY STREET
PASADENA, TEXAS

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LIST OF ACRONYMS

AOC	Administrative Order on Consent
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHESI	Clean Harbors Environmental Services, Inc.
Deer Park	Clean Harbors Deer Park L.P.
Effective	Effective Environmental, Inc.
EHS	EHS Support, LLC
Ensource	Ensource Corporation
Environ	Ramboll Environ
EPA	United States Environmental Protection Agency
ERRA	Emergency Response and Removal Action
HASP	Health and Safety Plan
HWDF	Hazardous Waste Derived Fuel
Intergulf	Intergulf Corporation facility
Lone Mountain	Clean Harbors Lone Mountain, LLC
MCC	MCC Recycling
NPL	National Priorities List
Old Vince	City of Pasadena Vince Bayou Wastewater Treatment Plant
PRP	Potentially Responsible Parties
QAPP	Quality Assurance Project Plan
QASP	Quality Assurance Sampling Plan
REW	REW Group LLC
SBB	Sparks-Barlow-Barnett, Inc.
Seabreeze	Seabreeze Environmental Landfill
TCEQ	Texas Commission on Environmental Quality
USOR	US Oil Recovery
Work Plan	Site Monitoring and Stabilization Work Plan

1.0 INTRODUCTION

On August 25, 2011, a group of Potentially Responsible Parties (PRPs) entered into an Administrative Settlement Agreement and Order on Consent (AOC) for a Time-Critical Removal Action (U.S. Environmental Protection Agency (EPA) Region 6, CERCLA Docket No. 06-10-11) in connection with the US Oil Recovery (USOR) and MCC Recycling (MCC) properties, respectively located at 400 North Richey Street and 200 North Richey Street in Pasadena, Texas 77506 (collectively referred to as the Site) (EPA, 2011a). This August 25, 2011 AOC and all amendments and addenda thereto are referred to herein as AOC 1. The properties are under the custody and control of a court-appointed Receiver. The removal action activities summarized in this report were performed during the period from 2012 through November 2015 by the USOR PRP Group pursuant to AOC 1. These activities were completed in cooperation with the receiver and under the oversight of the EPA. A separate AOC, currently in preparation, is intended to address additional removal actions to be performed at the 400 N. Richey Street property, and it is anticipated that one or more additional AOCs will also be prepared to address additional removal actions to be performed at the 200 N. Richey Street property.

Pursuant to AOC 1 requirements, Work Plan deliverables, including a Site Monitoring and Stabilization Work Plan (Work Plan), a Quality Assurance Sampling Plan (QASP), a Health and Safety Plan (HASP), and a Quality Assurance Project Plan (QAPP), were submitted to EPA for review and comment and, following receipt of EPA comments, were finalized in May 2012 (Environ, 2012a; Environ, 2012b, Environ, 2012c, Environ, 2012d, respectively). Addenda to this Work Plan were submitted for EPA review and approval to describe detailed removal actions performed under AOC 1. The activities summarized herein were performed in accordance with the Work Plans and associated addenda (see Section 5.0 for specific references).

2.0 SITE BACKGROUND

This section contains information regarding the Site location and description, operational and regulatory history, and previous removal action activities performed by the EPA prior to AOC 1.

2.1 SITE LOCATION AND DESCRIPTION

The Site is comprised of two properties containing three separate parcels of land located on North Richey Street in Pasadena, Harris County, Texas, situated north of State Highway 225 (Figure 1). The Site (Figure 2) consists of the following two separate properties:

- The USOR Property, located at 400 North Richey Street; and
- The City of Pasadena/MCC Property, located at 200 North Richey Street.

These properties are located in a mixed industrial/residential area north of the City of Pasadena, south of the Houston Ship Channel, and adjacent to Vince Bayou. The closest residences are approximately 0.08 miles (400 feet) south-southwest of the USOR property.

The USOR property (Figure 3) contains a one-story brick office building and guard shack located at the facility entrance at N. Richey Street, and a one-story warehouse building located in the approximate center of the parcel. The warehouse contains a laboratory, a small office area, a machine shop and parts storage area, and a container storage area. Additional Site structures include a tank farm located on the north end of the warehouse containing approximately 32 aboveground storage tanks (ASTs), the process area located just south of the tank farm area, a large concrete structure referred to as a bioreactor (demolished in 2014) west of the tank farm, and a lined containment pond located west of the warehouse.

The City of Pasadena/MCC property was the former City of Pasadena Vince Bayou Wastewater Treatment Plant (Old Vince) and consists of two parcels separated by Vince Bayou but joined by a connecting foot-bridge and piping (Figure 2). The east section of MCC consists of two clarifiers, two oxygen digesters, an oxygen activated sludge tank, a lift station, a gravity thickener, an aerobic digester, a belt filter press building, a pump control room, a sand filter, and a chlorine contact tank (basin/concrete containment area). The west section of MCC consists of headworks, a high rate trickling filter, a primary clarifier, a final clarifier, and two lift stations (EPA, 2011b).

2.2 OPERATIONAL HISTORY

2.2.1 USOR Property

When the Site was last operational, it was operated as a used oil processing and waste treatment facility by USOR LP and related entities (herein referred to as “USOR LP”). The USOR Property was developed for industrial purposes in approximately 1947 and land use has remained industrial since that time. Prior to June 2003, multiple businesses operated on the property, including chemical manufacturing companies (specializing in fertilizers and/or herbicides/pesticides), a cow hide exporter, and a leather tanner. USOR LP began operations on the property around June 2003 on a lease basis and subsequently acquired the property in December 2003. USOR LP ceased operations in June of 2010 and went into the state-court appointed Receivership in July of 2010.

2.2.2 City of Pasadena/MCC Property

From approximately 1945 till January 2009, the 200 N Richey Street property was owned by the City of Pasadena and used to treat municipal wastewater (TCEQ, 2011b). Old Vince operated under City of Pasadena ownership until 2004 when it was replaced with a new facility, the New Vince Bayou Wastewater Treatment Plant located to the east on the north side of Little Vince Bayou at the dead end of North Main Street (SBB, 2001). In 2009, US Oil Recovery LP (operating as MCC) acquired the former City of Pasadena wastewater treatment plant at 200 N. Richey, and USOR LP’s activities at 400 N. Richey St. property expanded to include activities at the 200 N. Richey property.

2.3 PREVIOUS REMOVAL ACTIONS

EPA performed two removal actions prior to AOC 1. Between July 1 and August 2, 2010, the EPA performed an Emergency Response and Removal Action (ERRA) at the USOR Property (EPA, 2011b). The removal action activities included securing and inventorying 225 roll-off boxes, 797 drums, and 212 poly totes and disposing of approximately 392,000 gallons of non-hazardous material off-site.

Following a heavy rain in November 2010, EPA performed another ERRA (TCEQ, 2011a). Approximately 410,000 gallons of non-hazardous oily liquid waste were transported off-site for fuels blending/recycling. Approximately 11,751 gallons of hazardous sludge and five drums of hazardous sludge washout waste were disposed off-site. In addition, nine vacuum boxes of non-hazardous sludge

and four vacuum boxes of hazardous sludge were disposed of off-site. EPA personnel completed the emergency response on December 20, 2010 (TCEQ, 2011a).

2.4 REGULATORY HISTORY

Following EPA response actions, supplemental sampling was performed in March 2011. The PRP group entered into AOC 1 in connection with the USOR and MCC properties. The Site was proposed to the National Priorities List (NPL) on September 16, 2011, and was placed on the NPL on September 18, 2012.

3.0 REMOVAL ACTIONS PERFORMED

This section describes removal action activities that have been performed at the Site in accordance with AOC 1 and associated addenda. Removal action activities are summarized in Table 1.

3.1 SITE MONITORING AND STABILIZATION ACTIVITIES

The primary purpose of Site Monitoring and Stabilization activities is to assess Site conditions to reduce the potential for releases of hazardous substances to soil and surface water while waste materials are present at the Site. Site Monitoring and Stabilization activities at the Site have been performed in accordance with the Site Monitoring and Stabilization Work Plan (Environ, 2012a). Progress reports documenting the Site monitoring and stabilization activities have been submitted to EPA on a monthly basis since June 2012.

3.1.1 Site Monitoring

Routine site monitoring has been conducted on a bi-weekly basis since June 2012. Site monitoring activities include checking the integrity of waste containers, measuring and recording available freeboard within secondary containments (North and South Tank Farm Secondary Containment structures, Sumps 34, 35, and 36, and Bays 45 and 48 on the USOR Property and the Chlorine Contact Tank on the MCC East property), monitoring other containment areas (Containment Pond and the Bioreactor on the USOR property and the Aeration Basin, the Primary Clarifiers, the High Rate Trickling Filter, the Oxygen Digesters, the Oxygen Activated Sludge Tank, the Former Sand Filter, the Aerobic Digester, and the Gravity Thickener on the MCC property) for potential overflow and off-site migration of containment contents, assessing perimeter Site security, and providing photographic documentation of changed conditions. To prevent unauthorized access, the Site is enclosed within a six-foot chain link security fence with locked gates. Motion- and infrared-sensitive security cameras have been installed and are monitored by a security contractor. Site inspections are documented in Site Conditions Checklists and progress reports documenting the Site monitoring and stabilization activities have been submitted to EPA on a monthly basis since June 2012.

3.1.2 Pumpdowns

When conditions warrant, a response action to pump down containments is initiated within 24 hours of an observation that less than 4 inches of freeboard exist or if a threatened overflow may occur from a significant weather event forecasted for the area. Since December 2011, approximately 1,300,000 gallons of liquid have been removed from the USOR property as part of pumpdown activities. During that same time, approximately 500,000 gallons of liquid have been removed as part of MCC property pumpdown activities. Liquids from both locations have been disposed at the Intergulf Corporation facility in Pasadena, TX (Intergulf).

3.1.3 Containment Pond

The Containment Pond is a geosynthetic membrane lined elliptical-shaped retention basin approximately 240-feet long by 80-feet wide. The water depth in the Containment Pond has fluctuated throughout the duration of the Site Monitoring activities conducted pursuant to 2011 AOC, depending on the amount and frequency of precipitation experienced at the Site.

Following sampling/analysis and subsequent TCEQ and EPA authorization, Ramboll Environ US Corporation (Environ) subcontractor REW Group LLC (REW) discharged approximately 589,400 gallons of water from the Containment Pond to Vince Bayou from December 9 through 13, 2013. PRP Group contractor Ensource Corporation (Ensource) discharged approximately 478,500 gallons of water from the Containment Pond to Vince Bayou from June 23 through 26, 2015.

3.2 BIOREACTOR REMOVAL ACTION

The Bioreactor was a rectangular open-topped concrete structure with two contiguous compartments located near the northwest corner of the USOR property (Figure 3). The purpose of the Bioreactor Removal Action was to remove all liquids and solids contained in the Bioreactor, manage those materials off-site at EPA-approved disposal facilities, pressure wash and then demolish the Bioreactor structure, and ship the resultant concrete and steel demolition debris off-site for recycling.

Bioreactor Removal Action activities were performed in accordance with Work Plan Addendum 1 (Environ, 2012e), which was approved by EPA on May 16, 2012, and later Work Plan Addendum 2 (Environ, 2013), which was approved by EPA on August 2, 2013. As part of these activities Effective

Environmental, Inc. (Effective) removed 458,413 gallons of liquid between July 2012 and November 2013 from the Bioreactor for disposal at Intergulf. Sumter Transport Company transported approximately 154,073 gallons of slurried Bioreactor solids and cutter stock off-site to approved cement kilns from December 12, 2013 through April 4, 2014. Demolished Bioreactor concrete and scrap (approximately 800 cubic yards of demolition debris) were transported from the facility in April 2014. Bioreactor Removal Action details are provided in the Bioreactor Removal Action Report (Environ and Golder, 2015a).

3.3 WAREHOUSE CONTAINER REMOVAL ACTION

The USOR property contains a warehouse in the central part of the Site (Figure 3) in which multiple containers (drums and totes) were located. The purpose of the Warehouse Container Removal Action was to remove the contents of these and other drums/totes from elsewhere on the Site and dispose of those contents and the containers off-site at EPA-approved facilities. These removal action activities were performed in accordance with Work Plan Addendum 3 (CHESI, 2014), which was approved by the EPA on April 9, 2014. Once waste in the drums and totes was characterized, the wastes were either bulked for off-site shipment, or shipped off-site in containers to the Clean Harbors Environmental Services, Inc. (CHESI) Lone Mountain, LLC (Lone Mountain) landfill or to the Clean Harbors Deer Park L.P. (Deer Park) incinerator, depending on the waste characteristics. A total of 1,107 containers were addressed by this removal action. These activities were performed between March 2014 and January 2015. Warehouse Container Removal Action details are provided in the Warehouse Container Removal Action Report (CHESI, 2015).

3.4 ROLL-OFF BOX REMOVAL ACTION

Residual liquid and solid waste was present in approximately 230 roll-off boxes and one frac tank scattered in multiple locations at the Site (Figure 3). The purpose of the Roll-off Box Removal Action was to remove and dispose of liquid and solids contained in these roll-off boxes and then pressure wash the boxes prior to staging. Removal of the roll-off boxes from the USOR property will be performed under a separate AOC, currently in preparation. Roll-off Box Removal Action activities were performed in accordance with Work Plan Addenda 2 and 5. Work Plan Addendum 2 (Environ, 2013) was approved by EPA on August 2, 2013. Work Plan Addendum 5 (Golder, 2014) was approved by the EPA on September 25, 2014.

Approximately 81,466 gallons of liquid were removed from roll-off boxes and transported to Intergulf, Seabreeze Environmental Landfill (Seabreeze), or Deer Park for disposal between August 2013 and March 2015. Approximately 1,673 tons of slurried solids (including approximately 303,808 gallons of roll-off box solids and 97,900 gallons of cutter stock), managed as Hazardous Waste Derived Fuel (HWDF), were removed from roll-off boxes and transported to EPA-approved cement kilns for disposal in October and November 2013. Approximately 567 tons of non-hazardous solidified sludge, solid waste and soil-like material were removed from roll-off boxes and transported to Seabreeze for disposal in February 2015. Approximately 95 tons of hazardous solids were removed from a frac tank on the USOR property in April and May 2014 and transported to the EPA-approved Systech cement kiln facility in Fredonia, Kansas as hazardous waste to be blended into HWDF. Roll-off Box Removal Action details are provided in the Roll-off Box Removal Report (Environ and Golder, 2015b).

3.5 TANK FARM LIQUIDS REMOVAL ACTION

A tank farm area containing approximately 32 Aboveground Storage Tanks (ASTs) and three sumps is present on the USOR property north of the warehouse and process areas (Figure 3). Twenty five (25) of the ASTs and two sumps contained liquids. Sampling and analysis of the residual wastes in the ASTs and sumps was performed in August 2014 in accordance with QASP Addendum 1 –Aboveground Storage Tanks Waste Removal (Effective and EHS, 2014) which was approved by EPA on July 17, 2014. Sample results were used for the subsequent characterization, profiling and removal of liquid wastes by Effective in accordance with Work Plan Addendum 4 (EHS, 2014), which was approved by the EPA on December 1, 2014. In December 2014, approximately 27,000 gallons of non-hazardous liquids were removed and transported from the tank farm area to Seabreeze. In January 2015, approximately 8,200 gallons of hazardous liquids were transported from the tank farm area to Deer Park. Tank Farm Liquids Removal Action details are provided in the Tank Farm Liquids Removal Action Report (EHS, 2015). Tank farm solids will be addressed under a separate AOC, currently in preparation.

4.0 SUMMARY

Site monitoring and stabilization activities have been performed in accordance with AOC 1 and associated work plans since June 2012. Stabilization activities have included and will continue to include pumpdowns of secondary containments when less than 4 inches of freeboard is observed or if a threatened overflow may occur from a significant weather event forecasted for the area. Removal actions performed under AOC 1 have included:

- the Bioreactor Removal Action, completed in April 2014, which involved the removal of all liquids and solids contained in the Bioreactor, management of those materials off-site at EPA-approved facilities, pressure washing and subsequent demolition of the Bioreactor structure, and shipment of the resultant concrete and steel demolition debris off-site for recycling;
- the Warehouse Container Removal Action, completed in January 2015, which addressed 1,107 containers (drums and totes) through the characterization, removal and disposal of residual waste in the containers and removal and disposal of the containers as well;
- the Roll-off Box Removal Action, completed in March 2015, which involved the removal of liquids and solids contained in approximately 230 roll-off boxes and one frac tank, management of those materials off-site, and pressure washing of those boxes and tank; and
- the Tank Farm Liquids Removal Action, completed in January 2015, which involved the removal and off-site disposal of non-hazardous and hazardous liquids from the tank farm area ASTs and sumps.

Removal action activities are summarized in Table 1. All of these removal actions were performed in accordance with EPA-approved work addenda.

5.0 REFERENCES

Clean Harbor Environmental Services, Inc. (CHESI), 2014, Addendum 3 to AOC Work Plan: Warehouse Container Removal Action Work Plan, US Oil Recovery Superfund Site, Pasadena, Texas. April 2.

Clean Harbor Environmental Services, Inc. (CHESI), 2015. Draft Warehouse Container Removal and Disposal Report, US Oil Recovery Superfund Site, Pasadena, Texas. September 15.

Effective Environmental, Inc. and EHS Support, LLC (Effective and EHS), 2014, Quality Assurance Sampling Plan Addendum 1 - Above Ground Storage Tanks Waste Removal US Oil Recovery Superfund Site, Pasadena, Texas. July 21.

EHS Support, LLC (EHS), 2014, Addendum 4 to AOC Work Plan: AST Liquid Removal Action Work Plan, US Oil Recovery Superfund Site, Pasadena, Texas. November 24.

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Golder Associates, Inc. (Golder), 2014, Addendum 5 to AOC Work Plan: Remaining Roll-off Box Waste Removal and Cleaning Work Plan, US Oil Recovery Superfund Site, Pasadena, Texas. September 26.

Ramboll Environ US Corporation (Environ), 2012a, Work Plan Site Monitoring and Stabilization, US Oil Recovery Superfund Site, Pasadena, Texas. May 30.

Ramboll Environ US Corporation (Environ), 2012b, Quality Assurance Sampling Plan, US Oil Recovery Superfund Site, Pasadena, Texas. May 30.

Ramboll Environ US Corporation (Environ), 2012c, Quality Assurance Project Plan, US Oil Recovery Superfund Site, Pasadena, Texas. May 30.

Ramboll Environ US Corporation (Environ), 2012d, Health and Safety Plan, US Oil Recovery Superfund Site, Pasadena, Texas. May 30.

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Ramboll Environ US Corporation (Environ), 2013, Addendum 2 to AOC Work Plan: Containerized Materials Field Screening and Removal Work Plan, US Oil Recovery Superfund Site, Pasadena, Texas. July 29.

Ramboll Environ US Corporation and Golder Associates, Inc. (Environ and Golder), 2015a. Draft Bioreactor Content Removal, Decontamination, and Demolition Report, US Oil Recovery Superfund Site, Pasadena, Texas. January 21.

Ramboll Environ US Corporation and Golder Associates, Inc. (Environ and Golder), 2015b. Draft Roll-off Box Content Removal and Decontamination Report, US Oil Recovery Superfund Site, Pasadena, Texas. October 13.

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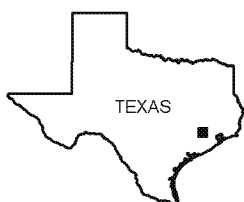
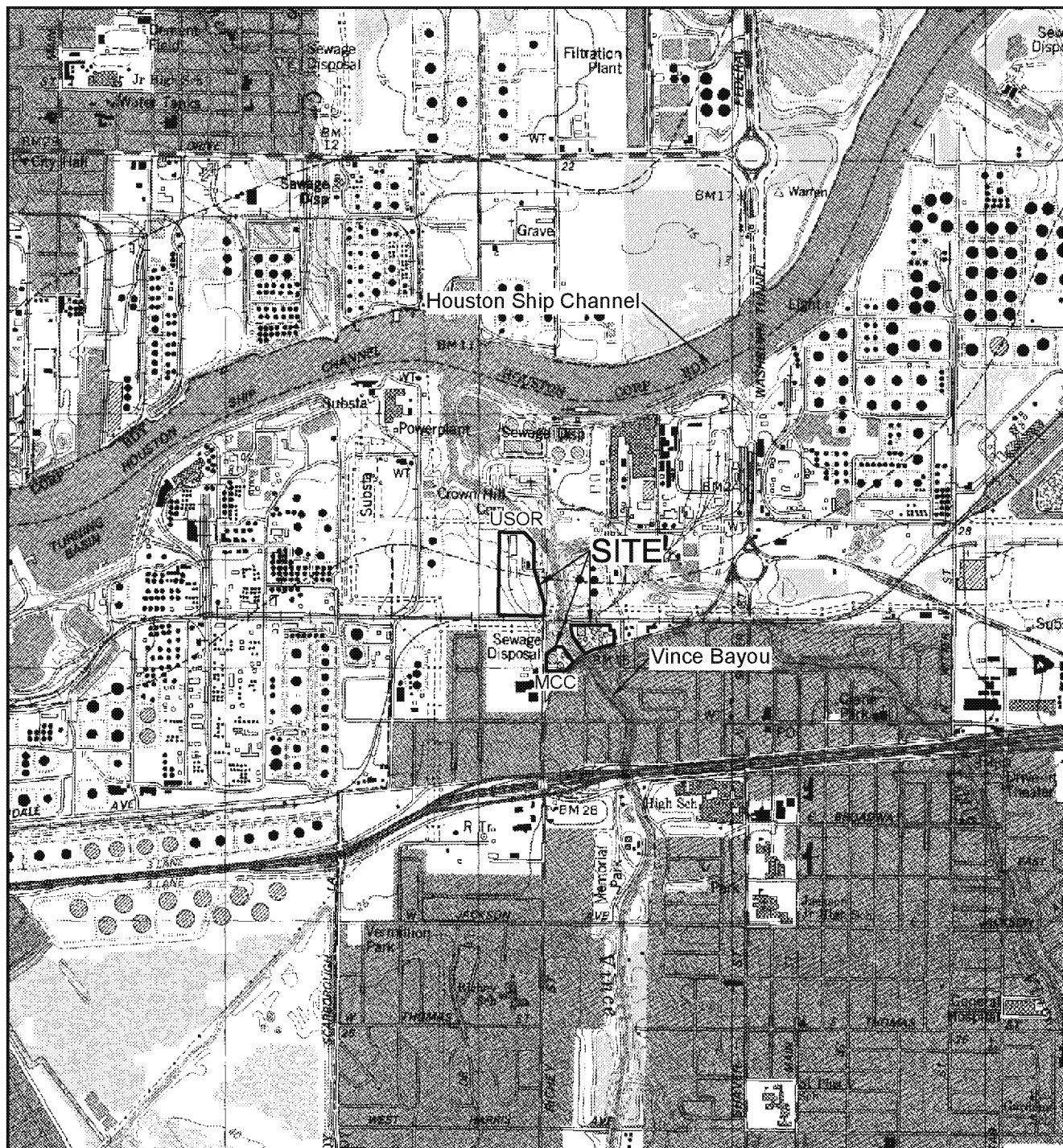
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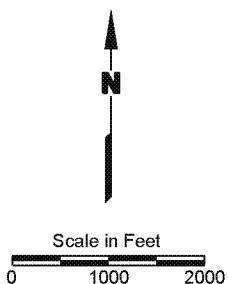
United States Environmental Protection Agency (EPA), 2011a. Administrative Settlement Agreement and Order on Consent for Removal Action (EPA Region 6, CERCLA Docket No. 6-10-11). August 25.

United States Environment Protection Agency (EPA), 2011b. Hazard Ranking System (HRS) Documentation Record for US Oil Recovery. September.

FIGURES



QUADRANGLE LOCATIONS



US OIL RECOVERY SUPERFUND SITE PASADENA, HARRIS COUNTY, TEXAS

Figure 1

SITE VICINITY MAP

PROJECT: 1737	BY: ADJ	REVISIONS
DATE: OCT., 2015	CHECKED: EFP	

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SOURCE:
Base map from www.tnris.gov, Pasadena, TX 7.5 min. USGS quadrangle dated 1982.



EXPLANATION

0000000 000 0000000

Approx. Property Boundary



Scale in Feet

0 150 300

US OIL RECOVERY SUPERFUND SITE PASADENA, HARRIS COUNTY, TEXAS

Figure 2

SITE BOUNDARY MAP

PROJECT: 1737

BY: ADJ

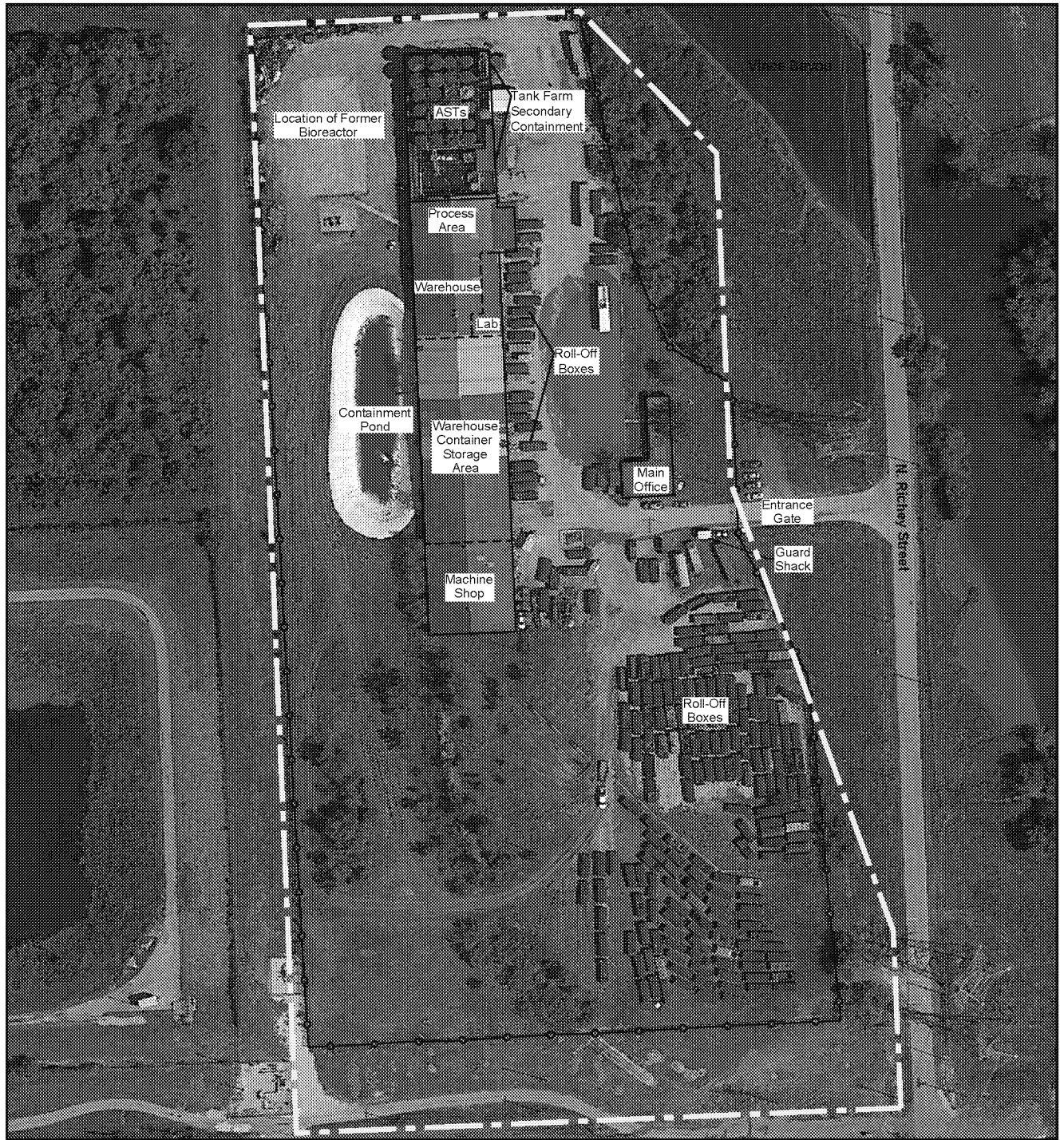
REVISIONS

DATE: OCT., 2015



CHECKED: EFP

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CONSULTING ENGINEERS AND SCIENTISTS

Source:
Imagery taken from Google Earth, photography dated April 8, 2014.



EXPLANATION

-  Approx. Property Boundary
 Approx. Security Fence



Scale in Feet
 0 75 150

US OIL RECOVERY SUPERFUND SITE PASADENA, HARRIS COUNTY, TEXAS

Figure 3

400 NORTH RICHEY PROPERTY LAYOUT

PROJECT: 1737	BY: ADJ	REVISIONS
DATE: OCT., 2015	CHECKED: EFP	

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Source:
 Imagery taken from Google Earth, photography dated April 8, 2014.

TABLES

Table 1 AOC 1 Site Activities Summary		
Activity	Description	Approximate Time Frame
Site Stabilization / Monitoring		
Pumpdowns of secondary containments and other areas	Approximately 1,800,000 gallons of liquid removed	December 20, 2011 – Present
Containment Pond discharge	Approximately 1,067,900 gallons of water discharged to Vince Bayou via prior EPA and TCEQ authorization	December 9 -13, 2013 June 23 -29, 2015
Removal Actions		
Bioreactor Removal Action	Approximately 458,413 gallons of liquid removed Approximately 154,073 gallons of slurried solids (including cutter volume) removed Bioreactor structure pressure-washed and demolished with approximately 800 cubic yards of demolition debris removed	July 2012 - April 2014
Warehouse Container Removal Action	Approximately 1,107 containers (drums and totes) removed	March 2014 - January 2015
Roll-off Boxes Removal Action	Approximately 81,466 gallons of liquid removed Approximately 303,808 gallons of solids removed (managed as HWDF) Approximately 567 tons of non-hazardous solids removed Approximately 95 tons of hazardous solids from Frac Tank removed	August 2013 - March 2015
Tank Farm Liquids Removal Action	Approximately 27,000 gallons of non-hazardous liquids removed Approximately 8,200 gallons of hazardous liquids removed	December 2014 – January 2015